

REPORT  
TO  
BOARD OF SELECTMEN,  
BOARD OF EDUCATION  
AND  
CITIZENS  
OF  
THE TOWN OF ESSEX, CONNECTICUT  
REGARDING  
NECESSARY RENOVATIONS TO  
ESSEX ELEMENTARY SCHOOL

SUBMITTED BY:

THE ESSEX ELEMENTARY SCHOOL RENOVATION COMMITTEE

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JANUARY 18, 2005

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## I. EXECUTIVE SUMMARY

Since its first meeting on June 3, 2003, the Essex Elementary School Renovation Committee (the “EESRC” or the “Committee”) examined the existing conditions of the Essex Elementary School buildings and grounds. The Committee has reviewed security and code issues, health and environmental concerns, mechanical, electrical and plumbing infrastructure, energy efficiency, acoustical treatments and a careful review of existing classroom and administrative space and their capacity to meet current and projected educational needs.

The Committee met with parents, educators, administrators and students, engaged space utilization and engineering professionals for expert advice regarding the facility and sought input from various community groups.

In stating its findings, the Committee has determined not to propose a specific architectural design at this time but has set forth in this Report and the accompanying reports of the Committee’s consultants, an itemized, in-depth examination of the condition of the existing building and grounds. The EESRC has identified necessary improvements in three key areas:

- ***infrastructure improvements*** to bring essential systems up to code and up to date as a result of years of deferred maintenance;
- ***space renovation and reconfiguration*** to better align the facility with current and projected educational practices; and

- ***health, safety and security improvements*** to correct deficiencies and remove needless distractions in the learning environment.

The Committee and its consultants analyzed the capacity of existing classrooms and reviewed state estimates for likely population increases. The Committee determined that, based on such estimates, expected growth can be accommodated by the judicious reconfiguration of the existing structure rather than adding additional structures. Although in its discussion with faculty, staff and parent groups, the Committee identified valid concerns about the need for more improvements than the Committee could realistically address, the Committee has elected to recommend only the improvements described in this Report.

The Committee's estimate of the costs for the necessary improvements to the Essex Elementary School described in this report is approximately \$10.1 million (before deducting any amounts applicable to State reimbursements).

## **II. BACKGROUND**

### ***A. Essex Elementary School***

The Essex Elementary School (the “School”) provides free, compulsory public education for approximately 550± elementary school children in grades K through 6. The Town of Essex provides facilities for the school at its elementary school building located at 108 Main Street in Centerbrook (the “Facility”). The Facility was constructed in 1954, with additions in 1967 and 1990. The Town’s Board of Selectmen is responsible for the provision of the Facility. Educational programming at the School is provided under the supervision of the Essex Elementary School Board of Education and the Supervision District of Regional School District #4 and is funded through an annual school budget.

## ***B. Recent History of School Construction and Renovation Initiatives for Essex Elementary School***

### ***1. Long Range Planning Committee (LRPC)***

In 1999, after a series of increases in the size of incoming classes of kindergartners at the School, the Essex Elementary School Board of Education formed the Long Range Planning Committee (*LRPC*) to recommend alternatives to respond to the then-projected increase in the school population. After reviewing growth projections and demographic data provided by the state Board of Education, the LRPC concluded that by the year 2005, the School would have a population of roughly 650 students. (That this prediction did not come to pass is more a reflection on the way the state does demographic estimates and changes to Town zoning designations than the good work the LRPC did.) The LRPC explored several options to combat school crowding and space demands. These included adding on to the existing facility, building a new K-2 school and moving some portion of the program off-site (e.g., move kindergarten off-site or 6th grade to John Winthrop Junior High School). The LRPC found that teaching spaces were inadequate, there was a lack of small workgroup spaces, storage and parking, there were too few appropriately placed lavatories and no real space for confidential conferences. The LRPC made its report to the Essex Elementary School Board of Education in 2000 and then disbanded.

2. *Essex Elementary School Building Committee (EESBC)*

Following the report of the LRPC, the Essex Board of Selectmen and the Essex Elementary School Board of Education appointed members to the Essex Elementary School Building Committee (*EESBC*) in January 2001 to determine the scope of a proposed construction and/or renovation project.

After receiving approval at a town meeting, the EESBC submitted an application to the State requesting authority to bond for \$15,887,386 to renovate and build additions to the School. At the beginning of the school year in 2001, the EESBC was on schedule to go to referendum in November of that year. Following the attacks on the World Trade Center in New York on September 11, 2001, the Board of Selectmen requested that the EESBC re-think and re-evaluate its proposal. In February 2002, the EESBC returned with a proposal to build a new K-2 School. After much discussion, in May 2002, the Board of Selectmen asked the EESBC to redirect its efforts to bring to the Town a proposal for referendum to put an addition onto the School and directed them to bring the project back with a budget in the range of \$3-6 million.

In May 2003, the EESBC's proposal for a \$7.2 million dollar project (including applicable State reimbursement amounts) went to the voters and failed at referendum. Shortly thereafter, the EESBC dissolved.

### *3. Essex Elementary School Renovation Committee (EESRC)*

In June 2003, a newly-formed Essex Elementary School Renovation Committee (*EESRC*) was charged by the Selectmen with the task of developing a conceptual plan for Essex Elementary School renovations with estimated costs. The Selectmen directed the EESRC to examine the specific needs that are not being met by the current real estate and buildings, and to review the size, design and state of repair for the Facility.

### III. FINDINGS

#### A. *The Methodology of the EESRC*

Shortly after its formation, the new Committee reviewed the reports of the LRPC and the 2001 EESBC, met with school administration and staff and toured the Facility with School maintenance personnel. During the summer of 2003, the members of the new Committee developed the analytical framework to guide its work. The Committee determined it would focus on several areas based on its provisional analysis of available reports and observable conditions at the School. These areas were:

- ***Public input*** to develop a method of gathering information that allowed and encouraged the suggestions and guidance from parents, teachers, Town officials and Essex residents;
- ***Space utilization and utility for current and proposed educational programs;***
- ***Mechanical, Electrical and Plumbing systems;***
- ***Energy efficiency***, including an assessment of the condition and lifespan of existing systems and the building envelope (roof & walls);
- ***Code analysis*** to determine Facility compliance with existing building and fire codes;
- ***Health-related issues*** such as the concern about presence of asbestos and mold and an overall assessment of air quality; and

- ***Security***, including review of multiple entrances and line-of-sight problems at the School's main entrances.

Based on the ambitious scope of review undertaken by the EESRC, the Committee sought and received approval from the Town to engage:

- a firm of architects to undertake a space utilization and planning study;
- a firm of consulting engineers to examine the mechanical, electrical and plumbing and fire protection systems and to test air quality and assess the energy efficiency of the Facility's envelope and systems, as well as hazardous materials abatement issues;
- A code specialist to assess building code compliance and accessibility issues and to help coordinate possible changes with other professionals; and
- Hardware firms familiar with school security issues.

The Committee wanted to find out whether the symptoms of overcrowding could be relieved by adding more space, better management of available spaces or the reconfiguration of existing spaces. The Committee also required that a determination of space planning needs not be based on any initial design assumptions or notions but on current and projected use of spaces. In addition, the Committee sought to work with architects who would involve educators, parents and the community at large to identify space needs for the School's programs. Following the issuance of a request for proposals and interviews with five architectural firms, the Committee selected the firm of Arbonies King Vlock,

P.C. of Branford, Connecticut and has been well pleased with their work to date. Their reports are attached as **Appendix 1**, **Appendix 2** and **Appendix 3**.

The Committee also wanted to determine the condition and useful life for all of the building's major systems, its air quality and energy efficiency. The Committee also sought recommendations that took in not only first dollar costs of improvements, but the lifecycle costs as well. Following the issuance of a request for proposals and interviews with four engineering firms, the Committee selected the firm of vanZelm Heywood & Shadford, Inc. of West Hartford, Connecticut and has been well pleased with their work to date. Their report is attached as **Appendix 4**.

The Committee also engaged Philip R. Sherman, P.E. of Elkins, New Hampshire for Fire Protection Engineering and Building Code Consulting and has been well pleased with his work to date. His report is attached as **Appendix 5**.

## ***B. Summary Findings***

The Committee has generally adopted the findings of the consultants. (See attached **Appendices**.) Based on its research, analysis and discussions and review and recommendation by its outside consultants, the Committee has developed the following conclusions about the state of the Facility and its compatibility with current and projected programs at Essex Elementary School:

- Educational philosophy has evolved since the building was constructed.  
(See attached description of approach to meeting educational needs by Asst. Principal D. O'Donnell, **Appendix 6**)
- Educators are currently working around obstacles imposed by the Facility in managing the educational experience for students. Certain constraints of previous planning and construction currently limit the ability of the facility to serve stated educational and community needs.
- Capacity to handle growth of population is capped at 610 pupils according to state guidelines; however, based on current educational theory, EES has a greater demand for space than state guidelines permit.

- Current analysis of the best State estimates indicate flat or limited growth in the school population for as far out the State can provide projections. These numbers, however, may change from year to year.
- Spaces originally designed for storage of classroom materials have been cannibalized for small group and one-on-one service delivery.
- Certain interior spaces should be reconfigured to more closely address current and projected uses for the facility.
- Expanding and dividing classrooms would provide needed teaching rooms and small group spaces.
- Administrative spaces are inadequate for: confidential parent conferences and planning meetings during school hours, delivery of school nurse services, appropriate working spaces for principal and assistant principal and administrative staff.
- Circulation, security and way finding through the building are problematic.
- Facilities usage is primarily unscheduled and information about any unused spaces throughout the day is unavailable.

- Security of main entrance is hampered by no visual line of sight by staff in the main entrance. It is far too easy for someone to enter the school unescorted and wander among the classrooms and never check in at the main office.
- Acoustical treatments to the cafeteria are needed to reduce lunchtime crowd noise which students, staff and faculty roundly indicate is excessive.
- The cafeteria stage is currently used for storage, but the space is not well tailored for such use. The stage area could be redesigned as dedicated storage space for the storage of classroom materials or used to locate children's lavatories.
- When the gymnasium and music areas were constructed, acoustical treatments to permit simultaneous productive use by competing programs were given insignificant attention or funding. Both musical and physical education programs would be improved by better acoustical treatments in and between these spaces.
- Parking and drop off is confusing generally. Use of the east side parking lot is made more dangerous and frustrating for many drivers by inefficient and ill-designed curb cuts.

- Use by the community of the Facility is year round and broad-based.
- Most windows in the 1950s portion of the building are so old that replacement parts cannot be found to repair them and offer little in the way of energy efficiency. Replacement windows will be easier to maintain and will be more energy efficient; however, replacement will also involve the remediation of asbestos-containing caulking and other materials.
- Windows facing the central courtyard need better sun control to reduce glare and alleviate heat gain.
- Flooring tiles are secured to the floor with asbestos-containing materials that need to be encapsulated or removed when flooring tiles are repaired and/or replaced. Tile floors also have little sound dampening properties.
- Steam heat system is now 50 years old, has a high cost of maintenance, and is not energy efficient.
- Pneumatic temperature controls at the Facility are outmoded and inefficient.
- HVAC systems do not meet current State-mandated air quality standards.

- Air handling unit in the cafeteria is 50 years old, has exceeded its useful life and is inefficient. Other building air handling equipment is approaching the end of its useful life.
- Air to air heat exchangers would improve air quality, reduce boiler load and energy efficiency. The new systems will provide proper amount of outdoor air to reduce instances of students getting sleepy, will reduce noise and insects that would otherwise enter through open windows and will generally improve air quality.
- Air ducts servicing the school need cleaning.
- Domestic Hot Water System does not meet current code.
- Lighting in certain spaces is insufficient and more reflective ceiling treatments would improve indirect classroom lighting.
- Certain electrical systems at the facility need replacing because they are old or do not meet current codes.
- Building security would be improved by replacing hardware sets on exterior doors with centralized access controls.

- The in-ground fuel oil tank has aged beyond recommended usefulness and needs replacing. Underground fuel storage increases environmental risks and raise environmental law compliance issues.
- Current building and fire codes require the addition of a fire sprinkler system to the 1950's building.
- Exit/emergency lighting systems need to be upgraded to provide full coverage and replace emergency lighting battery systems.

### ***C. Recommendations and Detailed Cost Expectations***

The EESRC is recommending the following program of improvements and renovations to the School Facility:

<b>Deferred Maintenance (17%)</b>	<b>\$</b>	<b>1,275,000</b>
Convert steam piping to hot water piping system	150	k
Plumbing system replacement including additional restrooms @ cafeteria	350	k
Change temperature control system from pneumatic to Digital Control	300	k
Upgrade original building electrical wiring & systems	200	k
Replace "CDP" Electrical panel	125	k
Boiler room modifications	150	k
<b>Education Program/Space Renovation (25%)</b>	<b>\$</b>	<b>1,880,000</b>
Expand & Divide seven 1950's classrooms to current teaching needs	1,200	k
Modify classroom space to incorporate 14 educational break-out spaces	500	k
Replace ceiling tile in 1950's classrooms	75	k
Cafeteria acoustical treatments & stage modifications	25	k
Upgrade acoustics in gymnasium & between gym & Stage/Music	80	k
<b>Health, Safety &amp; Security (58%)</b>	<b>\$</b>	<b>4,270,000</b>
Reconfigure main entrance to enhance security	500	k
Replace exterior door hardware sets with central security system	45	k
Asbestos abatement including flooring replacement	500	k
Add State mandated fresh air ventilating system	1,000	k
Replace underground fuel oil tank	75	k
	850	k

Replace exterior windows with energy efficient windows, sun shading

Replace flooring in the 1950's building	300	k
Add a fire sprinkler system to the 1950's building	420	k
Replace exit / emergency lighting systems	30	k
Add additional electrical receptacle devices	70	k
Replace electrical lighting fixtures in 1991's building	50	k
Clean existing HVAC ductwork	30	k
Reconfigure east parking area to become bus drop-off/pick-up	400	k

	(100%)	Subtotal	\$	7,425,000
	Escalation (1 Year)	7%	\$	520,000
	Design Contingency	5%	\$	371,000
<b>Total Hard Costs</b>			\$	<b>8,316,000</b>
Architects, Engineer & other professionals	10%		\$	832,000
Legal Costs	1.0%		\$	83,000
Bond				
Expenses	2.5%		\$	208,000
Construction Administration Costs	3%		\$	208,000
<b>Total Soft Costs</b>			\$	<b>1,331,000</b>
<b>Hard Costs</b>			\$	<b>8,316,000</b>
<b>Soft Costs</b>			\$	<b>1,331,000</b>
Subtotal			\$	<b>9,647,000</b>
<b>Project Contingency</b>	<b>5.0%</b>		\$	<b>482,000</b>
<b>TOTAL PROJECT COSTS</b>			\$	<b>10,129,000</b>

Note: Costs identified do not include applicable deductions likely state reimbursement amounts.

### **III. EXCLUDED ITEMS AND OTHER RECOMMENDATIONS**

#### ***A. Items identified but not addressed by Committee's recommendations***

- The EESRC had considered but has not proposed any significant enlargement of the footprint of the school facility. Although there is some risk that an unexpected population increase will further stress the capacity of the School, current state estimates indicate that no significant increase is likely. Also, the “expand and divide” approach to reconfiguring existing spaces suggested by the Committee’s architects should provide additional teaching spaces in the existing structure.
- The Committee did not address educational technology needs and drew no conclusions about the need for educational technology expenditures.
- The Committee’s consultants recommended adding air conditioning; but because of the additional costs and conclusions about more pressing priorities determined that the Committee did not wish to endorse this recommendation. The Facility’s primary use is seasonal: the cost/benefit ratio of air conditioning did not appear worthwhile.
- The Committee determined that there was an aesthetic need to do significant interior design work to improve the appearance of School’s

media center, which frequently serves as meeting space for town organizations during off-hours, but found greater need for other infrastructure and educational improvements.

- Although the report of the Committee's engineering consulting described existing observable conditions with respect to sewage and storm water discharge, the consultants did not specifically recommend changes to the septic system or storm water drains.
- The Committee did not specifically address the need for playground improvements, although some dissatisfaction with playground facilities surfaced during parent meetings with the space planning architectural consultants.
- This Report does not address replacement or repair of roofing since the Board of Education budget includes a sinking fund for roof repairs.

## ***B. Operational and other out-of-scope recommendations***

The EESRC has spent the last year and a half considering the condition and adequacy of school facilities for stated community purposes. In the course of the Committee's analysis of certain issues, the Committee encountered other issues that are outside the scope of the Committee's purpose or beyond the scope of what the Committee thought it could realistically recommend. This list comprises those issues which the Committee suggests may find a champion or constituency to improve the quality of the facilities or services delivery but for which the Committee had neither the time nor expertise nor charge to address:

- A school facilities liaison should be appointed to ensure smooth coordination of school facilities maintenance is not ignored in Town Budget. The facility and educators currently have more needs than the committee can prudently recommend given current town requirements for capital expenditures. Even if all renovations proposed by the committee are undertaken, the Town must plan more deliberately for ongoing facility maintenance and capital planning.
- Regional School District No. 4 and the EES administration should consider the feasibility of an inventory management system for school property items to identify and dispose of unused or unusable property to conserve on the use of available storage spaces and to promote the efficient acquisition, storage and disposal of educational materials.

- School administrators, where possible, should develop a central schedule to identify and redeploy available spaces throughout the day.
- Community leaders should encourage review by Board of Education and discussion among community of alignment of educational theory with capacity of school to implement prevailing theories with existing and proposed facilities so that theories implemented reflect values, goals and aspirations of the community and are realistically achievable. The Committee neither endorses nor finds fault with the approach taken by the educators at EES as it is not the role of the EESRC to pass on the appropriateness of pedagogical theory. We have assumed as a bedrock fact the educational approach offered by administrators and educators is correct. However, we note here that the Committee's understanding of the current approach to education undertaken at EES has been enriched and has evolved through discussions with educators and administrators. A wider discussion of these issues may benefit parents and voters generally.
- The Board of Education and administration should consider adding the aesthetic improvements to the School's Media Center as part of its ongoing facilities maintenance plan if such needs continue to be School priorities.

- The School's Parent Teacher Organization might be the best focal point for further discussions about the adequacy of the School's playground facilities, if a significant constituency continues to emerge for improvements in this area.

## **IV. APPENDIXES**

### ***A. Reports included in printed report and on town website***

1. ***Essex Elementary School Renovation Planning Study***, June 2004: Arbonies King Vlock, P.C.
2. ***Essex Elementary School Renovation Planning Study Addendum***, December 20, 2004: Arbonies King Vlock, P.C.
3. ***Essex Elementary School Renovation Planning Study Recommendations***, November 29, 2004: Arbonies King Vlock, P.C.
4. ***Essex Elementary School, Study of Existing MEP Systems and Energy and Air Quality Analysis, Essex Connecticut***, January 12, 2005: vanZelm Heywood & Shadford, Inc.
5. ***Report of Existing Code Conditions and Potential for Building Additions***, December 16, 2004: Philip R. Sherman, P.E.
6. ***Essex Elementary School – Changing Needs of Elementary School Education*** January 18, 2005: Asst. Principal Deborah O'Donnell
7. ***Essex Elementary School Benchmarking Analysis***, Institute for Sustainable Energy, Eastern Connecticut State University
8. ***Facility (Roof) Condition Report***, November 18, 2002: Carlisle Syntec
9. *Letter to Stephen Spires, Business Manger for Region 4 Public Schools from Peter M. Prowda*, December 11, 2003 relating to demographic and enrollment projections for Essex Elementary School
10. *Letter to Stanley E. Sheppard, Chairman, EESRC, from Superintendent of Schools John Gillespie*, July 17, 2003 in response to committee request for information
11. *Letter to Stanley Sheppard, Chairman, EESRC, from Ingersoll-Rand Security and Safety Consultants of New England dated November 12, 2003 regarding cost estimate for security locks.*

### ***B. References consulted by not appended***

1. ***Asbestos Management Plan for Essex Elementary School***, August 7, 2002: Industrial Health & Safety Consultants, Inc.